

Claims

1. Equipment for the treatment of waste-water containing organic pollutants, especially municipal or/and food industry waste-water, which has a main reactor (I) and an anterior reactor (II), as well as facilities for feeding in untreated sewage, removing cleaned water and sludge and aerating the waste-water entered into the main reactor, and a mixer (2) situated in the anterior reactor (II), characterised by that

- between the main reactor (I) and the anterior reactor (II) there is a facility or there are facilities for the recirculation of waste-water.

2. Equipment as in claim 1, characterised by that it has a U-shaped pipe-piece (15) for recirculation, the one arm (16a) of which is situated in the anterior reactor (II) separated from the main reactor (I) with a partition wall (12), its other arm (16b) is situated in the main reactor (I), and their lower ends are connected with a pipe taken through this partition wall (12), and their upper ends are situated at a height suiting the minimum water-level (v_{\min}) determined in these reactors; an air-pipe (13) with an end-fitting (13a) ensuring mammoth pump function is connected to the arm (16b) of the U-shaped pipe-piece (15) situated in the main reactor (I); and above the upper end of the arms (16a, 16b), at a certain distance (t) there is a transfer opening (8) in the partition wall (12) ensuring recirculation.

3. Equipment as in claim 2, characterised by that the air-pipe (13) branches off the aerating system belonging to the main reactor (I).

4. Equipment as in any of claims 1-3, characterised by that the aerating system belonging to the main reactor (I) has a

blowing device (4) and an air-pipe (4a) starting from it, distributor air-pipes (3a) that are connected to the above air-pipe (4a) and run near the base plate of the main reactor (I), and air-injection heads (3) connected to these air-pipes (3a).

5. Equipment as in any of claims 1-4, characterised by that the cleaned-water draining device is a decanting device (6) situated on a floating body (6b).

6. Equipment as in any of claims 1-5, characterised by that there is a pump (1) situated in a compensation basin (III) for feeding in untreated sewage, which pump (1) enters the anterior reactor (II).

7. Procedure realised by operating the equipment as in any of claims 1-6 for the biological activated sludge treatment of waste-water containing organic pollutants, characterised by that

- in a filling phase the main reactor (I) is filled from a minimum level (\underline{v}_{\min}) to a maximum level (\underline{v}_{\max}) with untreated sewage first taken into the lower range of the sludge mass (17) situated in the anterior reactor (II) and taken from the anterior reactor (II) to the main reactor (I), while - in a given case - the water situated in the main reactor (I) is aerated;

- in a following reaction - nitrification - denitrification phase the water situated in the main reactor (I) is aerated, and the water situated in the anterior reactor (II) is stirred, practically mechanically, while the waste-water is recirculated between the two reactors;

- then the sludge (17) is settled from the waste-water treated as above; and

- the treated sewage is drained from the equipment by decanting in a way that the water-level in the reactors is reduced to a minimum level (\underline{v}_{\min}); and

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- the excess sludge¹⁹ is removed from the
reactors.